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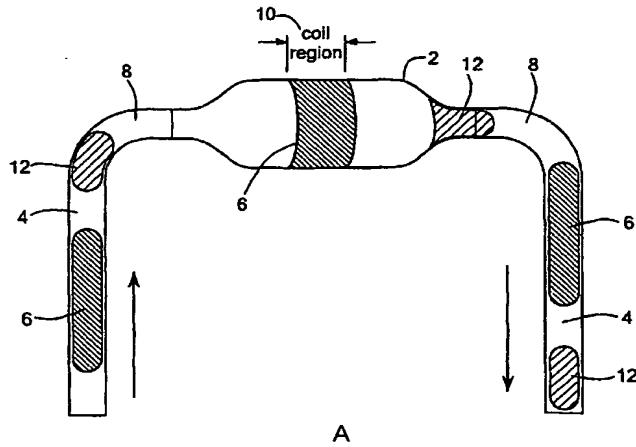
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(54) Title: METHOD FOR EFFICIENT TRANSPORT OF SMALL LIQUID VOLUMES TO, FROM OR WITHIN MICROFLUIDIC DEVICES



(57) Abstract: Methods are presented for realizing zero-dispersion segmented flow for transfer of small microfluidic samples onto or within microfluidic analysis or processing devices. Where fluidic systems are in whole or in part made of materials favorable to the zero-dispersion conditions for an indicated solvent/carrier fluid system, the system may be covalently coated to impart the necessary surface properties. This invention is demonstrated in an embodiment where 1 microliter samples (6) are robotically prepared and transferred through 3 meters of capillary tubing (4) to a microcoil NMR probe.



Sample Recovered After NMR Analysis as per the Present Invention

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WO 2005/059512 A3

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WO 2005/059512 A3



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Declarations under Rule 4.17:

- *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU,*

IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations*
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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B01L 3/00, 3/02; G01N 1/00, 1/10; C02F 1/40; C25D 1/12
 US CL : 422/99, 93, 100, 102; 436/174, 180; 204/600-602, 622

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B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X, P	US 20003/0232450 A1 (YOSHIDA) 18 December 2003, paragraphs 0055 and 0065	20-22
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A		1
X	US 6,130,098 A (HANDIQUE et al.) 10 October 2000, see Summary of Invention	20-21
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A		1
X	US 6,508,988 B1 (VAN DAM et al.) 21 January 2003, (column 13, lines 54-67; column 14 line 61 - column 15, line 7)	20-22
X	US 2002/0187074 A1 (O'CONNOR et al.) 12 December 2002, see paragraphs 0042, 0045, and 0060	20-21
Y	US 2003/0124736 A1 (MANZ et al.) 03 July 2003, paragraphs 0025, 0040	20-22
X	US 2003/0006140 A1 (VACCA et al.) 09 January 2003, see paragraphs 0062, 0063, and 0128	20-22

Further documents are listed in the continuation of Box C.

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